UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HUA-SHUANG KONG,
CALVIN CARTER, JR. and
JOSEPH SUMAKERIS

Appeal 2007-0073
Application 09/715,576
Technology Center 1700

Decided: December 13, 2006

Before EDWARD C. KIMLIN, PETER F. KRATZ, and CHUNG K. PAK, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 22, 24, 49 and 50. Claim 49 is illustrative:

49. A chemical vapor deposition system consisting essentially of:

a reaction vessel formed of a material substantially transparent to electromagnetic radiation;

a gas supply system in fluid communication with said reaction vessel;

a source of electromagnetic radiation external to said reaction vessel; and

a susceptor within said reaction vessel, said susceptor formed of a material that is thermally responsive to electromagnetic radiation, wherein said susceptor is defined by a plurality of straight sidewall sections, each section having a planar surface, with said sidewall sections connected at adjacent sides, to form a hollow inverted truncated cone with a plurality of wafer pockets on the inner circumference of said truncated cone, and wherein the spacing between facing sidewall sections is unobstructed and so dimensioned that said facing sidewall sections radiantly and directly heat the exposed surface of a facing substrate wafer to substantially the same temperature as said susceptor portion heats a substrate wafer that is in one of said wafer pockets to thereby minimize or substantially eliminate radial and axial temperature gradients across a substrate wafer.

The Examiner relies upon the following references in the rejection of the appealed claims:

Briody	US 3,659,552	May 2, 1972
Martin	US 4,579,080	Apr. 1, 1986

Appellants' claimed invention is directed to a chemical vapor deposition system comprising a reaction vessel and a susceptor within the vessel. The susceptor is defined by a plurality of straight sidewall sections which form an inverted truncated cone having a plurality of pockets on its inner circumference for holding wafers. The spacing between facing sidewall sections is dimensioned such that "the facing sidewall sections radially and directly heat the exposed surface of a facing substrate wafer to substantially the same temperature as the susceptor portion heats substrate

wafer that is in one of the wafer pockets, i.e., the unexposed faces that are in direct contact with the susceptor wall" (page 5 of principal Br., second paragraph).

Appealed claims 22, 24 and 49 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over Briody. Claim 50 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Briody in view of Martin.

We have thoroughly reviewed the respective positions advanced by Appellants and the Examiner. In so doing, we find that the Examiner's rejections are not sustainable.

We consider first the Examiner's 102/103 rejection over Briody. Although Briody discloses a chemical vapor deposition system having a plurality of wafer pockets formed in the inner wall of the susceptor, and the wafer pockets have a planar surface upon which the wafer rests, we agree with Appellants that the susceptor is not defined by a plurality of straight sidewall sections. When Appellants' claim language is read in light of the present Specification and given its broadest, reasonable interpretation, we find that Appellants' susceptor defined by a plurality of straight sidewall sections does not embrace the annular drum 16 of Briody which includes a plurality of removably mounted annular members, such as graphite rings 15. While the recess portion 17 of the ring 15 includes a flat face 18, we agree with appellants that flat faces 18 do not define the susceptor as a whole. In addition, we also agree with Appellants that "[t]he surfaces on which the substrate samples [of Briody] are placed are part of a continuous annular ring member and accordingly are not connected at adjacent sides thereof" (page 3 of Reply Br., first paragraph). In our view, the only way to interpret

the present claim language so that it is described by Briody is to do so in a way that it is not in conformance with and supported by the present Specification.

Moreover, the Examiner has not established sufficient correspondence between the apparatus disclosed in the present specification and the apparatus described by Briody to support the conclusion that the Briody vapor deposition system inherently performs the function recited in the appealed claims.

The Examiner's citation of Martin to reject claim 50 does not remedy the deficiencies of Briody discussed above.

In conclusion, based on the foregoing, we are constrained to reverse the Examiner's rejections.

REVERSED

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